Database App Menu

Revision 02

# Create Project

Create a new Android project with an Empty Activity template, with the project name db2 and an *activity* called *MainActivity*.

## Database and Data Model

Create the MySQLiteHelper.java. This class is responsible for creating the database. The onUpgrade() method will simply delete all existing data and re-create the table. It also defines several constants for the table name and the table columns.

The MySQLiteHelper.java should contain the following : (note your package name will be different).

On saving the content, your program should build ok – Check the Messages to ensure this.

**package** com.itsligo.ian.db2;  
  
*/\*\*  
 \* Created by Ian on 05/04/2016.  
 \*/***import** android.content.Context;  
**import** android.database.sqlite.SQLiteDatabase;  
**import** android.database.sqlite.SQLiteOpenHelper;  
**import** android.util.Log;  
  
**public class** MySQLiteHelper **extends** SQLiteOpenHelper {  
  
 **public static final** String ***TABLE\_COMMENTS*** = **"comments"**;  
 **public static final** String ***COLUMN\_ID*** = **"\_id"**;  
 **public static final** String ***COLUMN\_COMMENT*** = **"comment"**;  
  
 **private static final** String ***DATABASE\_NAME*** = **"commments.db"**;  
 **private static final int *DATABASE\_VERSION*** = 1;  
  
 *// Database creation sql statement* **private static final** String ***DATABASE\_CREATE*** = **"create table "** + ***TABLE\_COMMENTS*** + **"("** + ***COLUMN\_ID*** + **" integer primary key autoincrement, "** + ***COLUMN\_COMMENT*** + **" text not null);"**;  
  
 **public** MySQLiteHelper(Context context) {  
 **super**(context, ***DATABASE\_NAME***, **null**, ***DATABASE\_VERSION***);  
 }  
  
 @Override  
 **public void** onCreate(SQLiteDatabase database) {  
 database.execSQL(***DATABASE\_CREATE***);  
 }  
 @Override  
 **public void** onUpgrade(SQLiteDatabase db, **int** oldVersion, **int** newVersion) {  
 Log.*w*(MySQLiteHelper.**class**.getName(),  
 **"Upgrading database from version "** + oldVersion + **" to "** + newVersion + **", which will destroy all old data"**);  
 db.execSQL(**"DROP TABLE IF EXISTS "** + ***TABLE\_COMMENTS***);  
 onCreate(db);  
 }  
}

## Comment Class

Create the Comment.java file under the db2 package. Add the following code: (note your package name will be different).

On saving the content, your program should build ok – Check the Messages to ensure this.

**package** com.itsligo.ian.db2;  
  
*/\*\*  
 \* Created by Ian on 05/04/2016.  
 \*/***public class** Comment {  
 **private long id**;  
 **private** String **comment**;  
  
 **public long** getId() {  
 **return id**;  
 }  
  
 **public void** setId(**long** id) {  
 **this**.**id** = id;  
 }  
  
 **public** String getComment() {  
 **return comment**;  
 }  
  
 **public void** setComment(String comment) {  
 **this**.**comment** = comment;  
 }  
  
 *// Will be used by the ArrayAdapter in the ListView* @Override  
 **public** String toString() {  
 **return comment**;  
 }  
}

## Comments Data Source Class

Create the CommentsDataSource.java file under the db2 package. Add the following code: (note your package name will be different).

On saving the content, your program should build ok – Check the Messages to ensure this.

**package** com.itsligo.ian.db2;  
  
*/\*\*  
 \* Created by Ian on 05/04/2016.  
 \*/***import** java.util.ArrayList;  
**import** java.util.List;  
  
**import** android.content.ContentValues;  
**import** android.content.Context;  
**import** android.database.Cursor;  
**import** android.database.SQLException;  
**import** android.database.sqlite.SQLiteDatabase;  
  
**public class** CommentsDataSource {  
  
 *// Database fields* **private** SQLiteDatabase **database**;  
 **private** MySQLiteHelper **dbHelper**;  
 **private** String[] **allColumns** = { MySQLiteHelper.***COLUMN\_ID***,  
 MySQLiteHelper.***COLUMN\_COMMENT*** };  
  
 **public** CommentsDataSource(Context context) {  
 **dbHelper** = **new** MySQLiteHelper(context);  
 }  
  
 **public void** open() **throws** SQLException {  
 **database** = **dbHelper**.getWritableDatabase();  
 }  
  
 **public void** close() {  
 **dbHelper**.close();  
 }  
  
 **public** Comment createComment(String comment) {  
 ContentValues values = **new** ContentValues();  
 values.put(MySQLiteHelper.***COLUMN\_COMMENT***, comment);  
 **long** insertId = **database**.insert(MySQLiteHelper.***TABLE\_COMMENTS***, **null**,  
 values);  
 Cursor cursor = **database**.query(MySQLiteHelper.***TABLE\_COMMENTS***,  
 **allColumns**, MySQLiteHelper.***COLUMN\_ID*** + **" = "** + insertId, **null**,  
 **null**, **null**, **null**);  
 cursor.moveToFirst();  
 Comment newComment = cursorToComment(cursor);  
 cursor.close();  
 **return** newComment;  
 }  
  
 **public void** deleteComment(Comment comment) {  
 **long** id = comment.getId();  
 System.***out***.println(**"Comment deleted with id: "** + id);  
 **database**.delete(MySQLiteHelper.***TABLE\_COMMENTS***, MySQLiteHelper.***COLUMN\_ID*** + **" = "** + id, **null**);  
 }  
  
 **public** List<Comment> getAllComments() {  
 List<Comment> comments = **new** ArrayList<Comment>();  
  
 Cursor cursor = **database**.query(MySQLiteHelper.***TABLE\_COMMENTS***,  
 **allColumns**, **null**, **null**, **null**, **null**, **null**);  
  
 cursor.moveToFirst();  
 **while** (!cursor.isAfterLast()) {  
 Comment comment = cursorToComment(cursor);  
 comments.add(comment);  
 cursor.moveToNext();  
 }  
 *// make sure to close the cursor* cursor.close();  
 **return** comments;  
 }  
  
 **private** Comment cursorToComment(Cursor cursor) {  
 Comment comment = **new** Comment();  
 comment.setId(cursor.getLong(0));  
 comment.setComment(cursor.getString(1));  
 **return** comment;  
 }  
}

## Layout XML file for User Interface

Clicking on the res/layout/activity\_test\_database.xml,

Remove all the contents of the file and add the following:

*<?***xml version="1.0" encoding="utf-8"***?>*<**LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"** >  
  
 <**LinearLayout  
 android:id="@+id/group"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"** >  
  
 <**Button  
 android:id="@+id/add"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Add New"  
 android:onClick="onClick"**/>  
  
 <**Button  
 android:id="@+id/delete"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Delete First"  
 android:onClick="onClick"**/>  
  
 </**LinearLayout**>  
  
 <**EditText  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:id="@+id/input1"  
 android:layout\_gravity="center\_horizontal"  
 android:hint="Enter info to add to database"** />  
  
 <**ListView  
 android:id="@android:id/list"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"** />  
  
</**LinearLayout**>

The Design window should look like

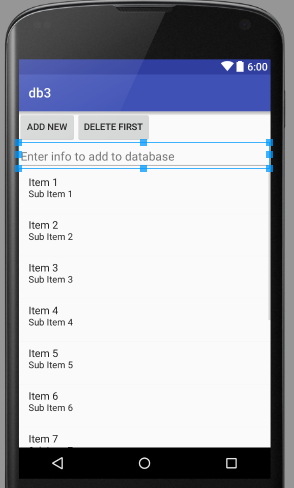


Figure 1 - The Design layout

## TestDatabaseActivity Class

Finally, delete the MainActivity.java code and add the following (again ensure your package is correct for you).

Save and build the project.

**package** com.itsligo.ian.db3;  
  
**import** android.os.Bundle;  
**import** java.util.List;  
**import** android.app.ListActivity;  
**import** android.view.View;  
**import** android.widget.ArrayAdapter;  
**import** android.widget.EditText;  
  
**public class** MainActivity **extends** ListActivity {  
 **private** CommentsDataSource **datasource**;  
 **public** EditText **userText** = **null**;  
  
 @Override  
 **public void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
 **userText** = (EditText) findViewById(R.id.***input1***);  
  
 **datasource** = **new** CommentsDataSource(**this**);  
 **datasource**.open();  
  
 List<Comment> values = **datasource**.getAllComments();  
  
 *// use the SimpleCursorAdapter to show the  
 // elements in a ListView* ArrayAdapter<Comment> adapter = **new** ArrayAdapter<Comment>(**this**,  
 android.R.layout.***simple\_list\_item\_1***, values);  
 setListAdapter(adapter);  
 }  
  
 *// Will be called via the onClick attribute  
 // of the buttons in main.xml* **public void** onClick(View view) {  
 @SuppressWarnings(**"unchecked"**)  
 ArrayAdapter<Comment> adapter = (ArrayAdapter<Comment>) getListAdapter();  
 Comment comment = **null**;  
 **switch** (view.getId()) {  
 **case** R.id.***add***:  
 String inStr = **userText**.getText().toString();  
 *// save the new comment to the database* comment = **datasource**.createComment(inStr);  
 adapter.add(comment);  
 **break**;  
 **case** R.id.***delete***:  
 **if** (getListAdapter().getCount() > 0) {  
 comment = (Comment) getListAdapter().getItem(0);  
 **datasource**.deleteComment(comment);  
 adapter.remove(comment);  
 }  
 **break**;  
 }  
 adapter.notifyDataSetChanged();  
 }  
  
 @Override  
 **protected void** onResume() {  
 **datasource**.open();  
 **super**.onResume();  
 }  
  
 @Override  
 **protected void** onPause() {  
 **datasource**.close();  
 **super**.onPause();  
 }  
  
}

# Run the APP

You should run the app and see it on your phone. You can add or delete your own text. It will be stored in the database

# Resources

Modified from the website <http://www.vogella.com/tutorials/AndroidSQLite/article.html>

## Finished Project View

You should have four java files all of the same package, which will be different to below.

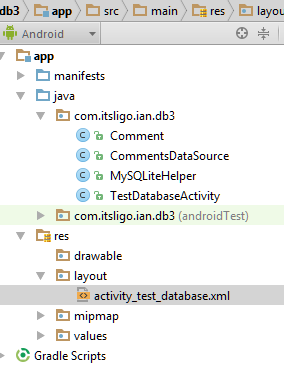


Figure 2 - Project View